

## Experimental Climate Monitoring and Prediction

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29 October 2015

### FECT BLOG

Past reports available at  
<http://fectsl.blogspot.com/> and

<http://fectsl.wordpress.com/>

### FECT WEBSITES

<http://www.climate.lk> and  
<http://www.tropicalclimate.org/>

### October 15, 2015 PACIFIC SEAS STATE

During late September through mid-October 2015 the tropical Pacific SST was at a strong El Niño level. All atmospheric variables strongly support the El Niño pattern, including weakened trade winds and excess rainfall in the east-central tropical Pacific. The consensus of ENSO prediction models indicate continuation of strong El Niño conditions during the October-December 2015 season in progress. Some slightly further strengthening is possible into later fall, with the event slowly weakening during spring 2016.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

1<sup>o</sup>C above average temperature was observed around Sri Lanka.

### MJO STATE

MJO phase is in 2 therefore shall slightly enhance rainfall in Sri Lanka.

### Highlights

Up to 40 mm rainfall was observed in north eastern, western and southern regions of the country during 21<sup>st</sup> – 27<sup>th</sup> October. Kalkudah, Kalmunai and Kattankudy received heavy rainfall up to 220 mm on 24<sup>th</sup> October and rainfall up to 160 mm was observed in the ocean near Trincomalee while Trincomalee received rainfall up to 140 mm on 27<sup>th</sup> October. Every prediction model predict an increase of rainfall during the next week.

### Summary

#### Monitoring

**Weekly Monitoring:** During 21<sup>st</sup>–27<sup>th</sup> October western, north eastern and southern regions mostly received rainfall. On 21<sup>st</sup> October rainfall up to 60 mm was observed around Kuruwita and rainfall up to 50 mm was observed around Kekirawa and Kuruwita on 22<sup>nd</sup> October. On 23<sup>rd</sup> October Kegalle, Kuruwita, Eheliyagoda, Dehiattakandiya and western province received rainfall up to 50 mm. On 24<sup>th</sup> October Kalkudah, Kattankudy and Kalmunai received rainfall up to 220 mm while Moneragala, Polonnaruwa, Hambantota and southern regions of Galle and Matara received rainfall up to 80 mm. On 25<sup>th</sup> October rainfall up to 50 mm was observed around Kalmunai and Kattankudy while ocean near Batticaloa received rainfall up to 70 mm. Northern region of Moneragala, ocean near Batticaloa and Trincomalee received rainfall up to 120 mm while Vavuniya and Kalmunai received rainfall up to 90 mm on 26<sup>th</sup> October. Rainfall up to 160 mm was observed in the ocean near Trincomalee on 27<sup>th</sup> October while Trincomalee received rainfall up to 140 mm.

**Monthly Monitoring:** In September 2015 the entire country received above average rainfall while the ocean near northern and eastern provinces received below average rainfall.

#### Predictions

**14 day prediction:** NOAA NCEP models predict relatively high rainfall in south western region of the country compared to the rest of the country during 28<sup>th</sup> October – 3<sup>rd</sup> November. Total rainfall above 135 mm is expected during the week in the south western region and total rainfall up to 115 mm is expected in the rest of the country except the northern region. Northern region is expected to receive rainfall up to 95 mm. These models predict the rainfall shall be decreased during 4<sup>th</sup>- 10<sup>th</sup> November and total rainfall above 135 mm is expected in southern region, total rainfall up to 115 mm is expected in north western region and the northern and south eastern regions shall receive total rainfall up to 95 mm.

**IMD WRF & IRI Model Forecast:** According to the IMD WRF model rainfall up to 65 mm is expected around Nilaveli on 30<sup>th</sup> October while eastern region shall receive rainfall up to 35 mm and rest of the country also shall receive slight amounts of rainfall. On 31<sup>st</sup> October, rainfall is expected up to 125 mm in northern region of Kurunegala while rainfall up to 65 mm is expected around Weligama and Pelawatta. Central and southern regions also shall receive rainfall up to 35 mm. IRI CFS models predict total rainfall up to 200 mm in south eastern region of the country during 28<sup>th</sup> October – 2<sup>nd</sup> November.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast for November to January, the total 3 month precipitation shall be climatological. The 3 month temperature has more than 70-80% likelihood in the entire country of being in the above-normal tercile during this period.

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- Weekly precipitation forecast (IRI)
- Seasonal Predictions from IRI

<sup>1</sup> International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

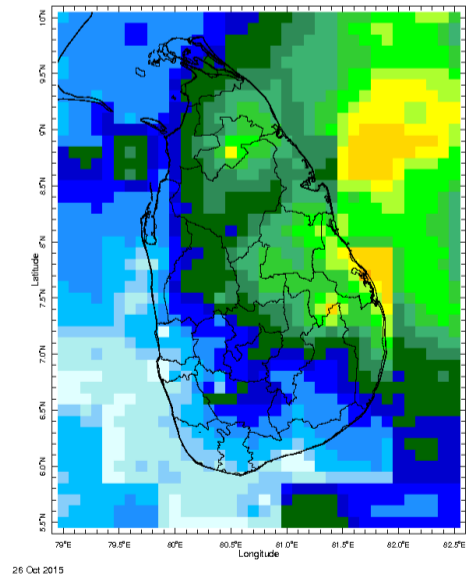
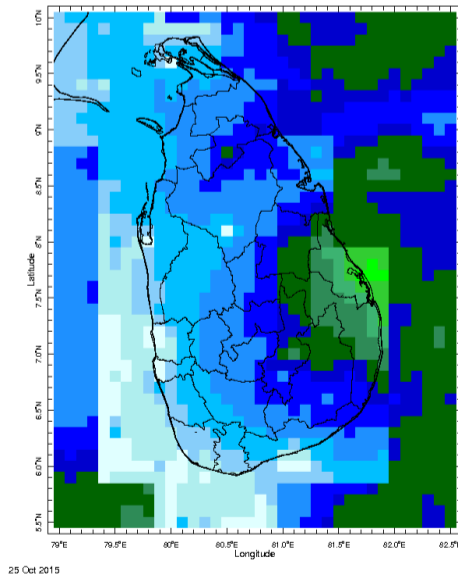
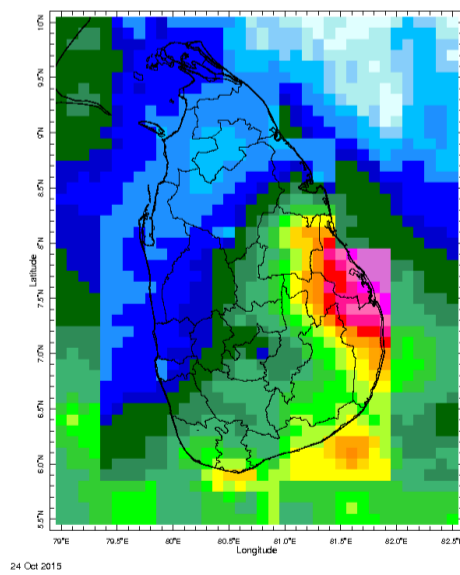
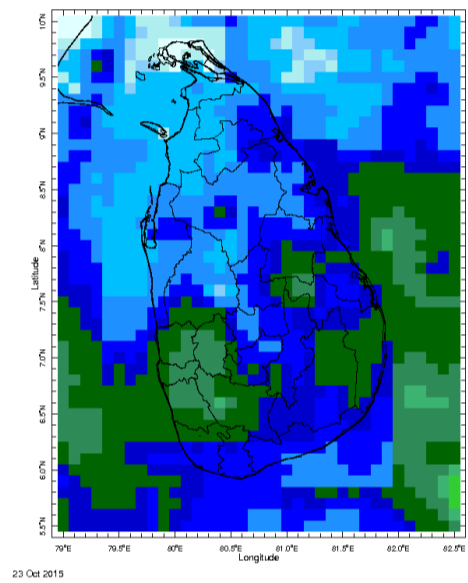
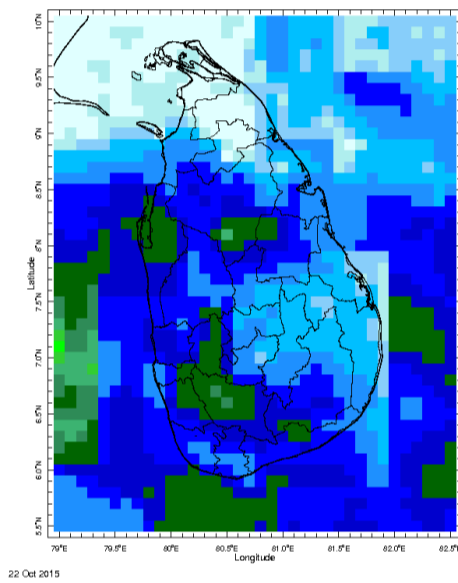
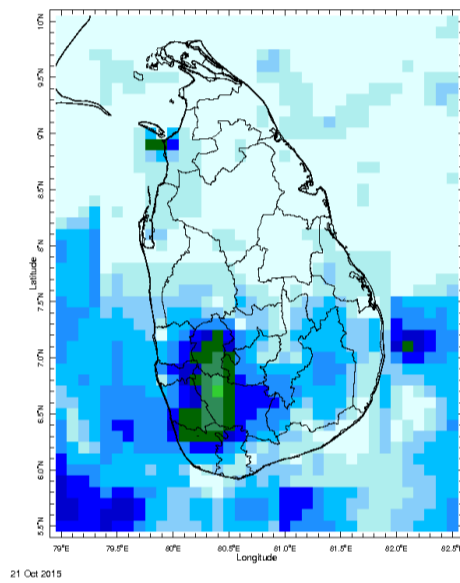
**Weekly Hydro- Meteorological Report for Sri Lanka**

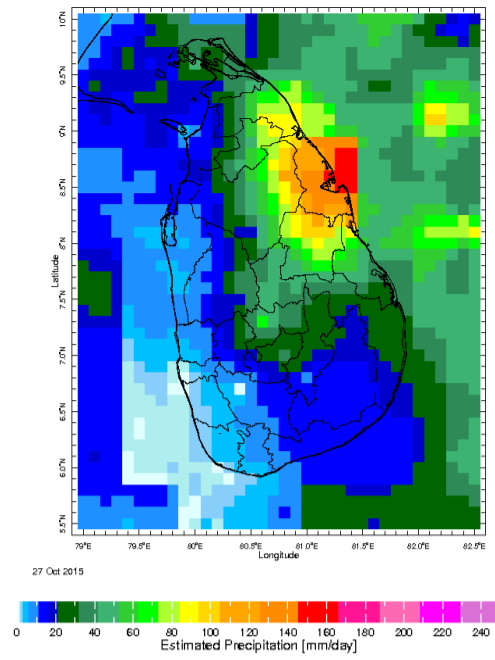
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**Daily Rainfall Monitoring**

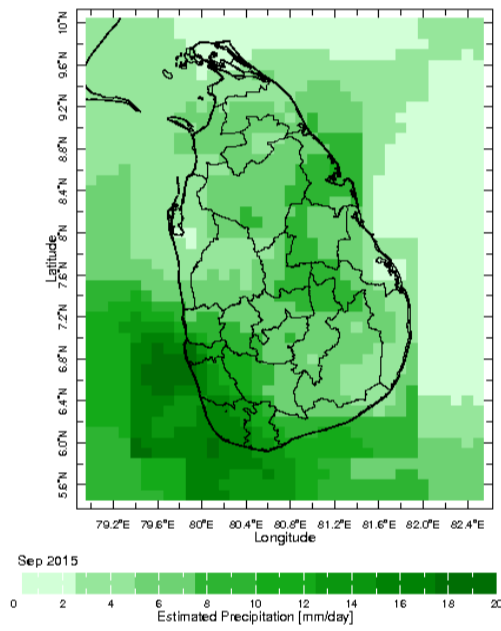
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



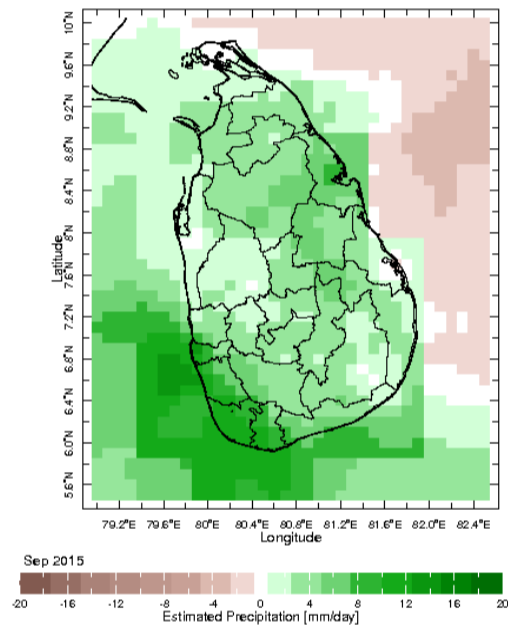


### Monthly Rainfall Monitoring

The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall

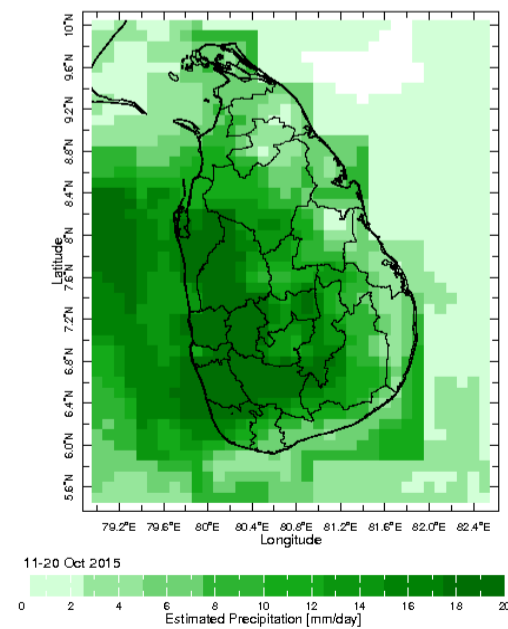
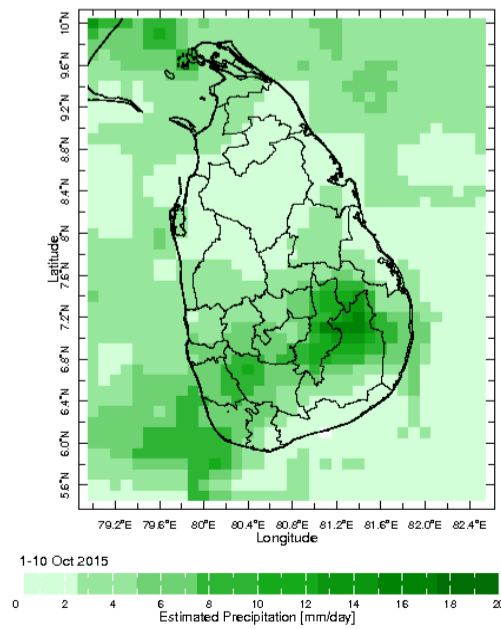


Monthly Average

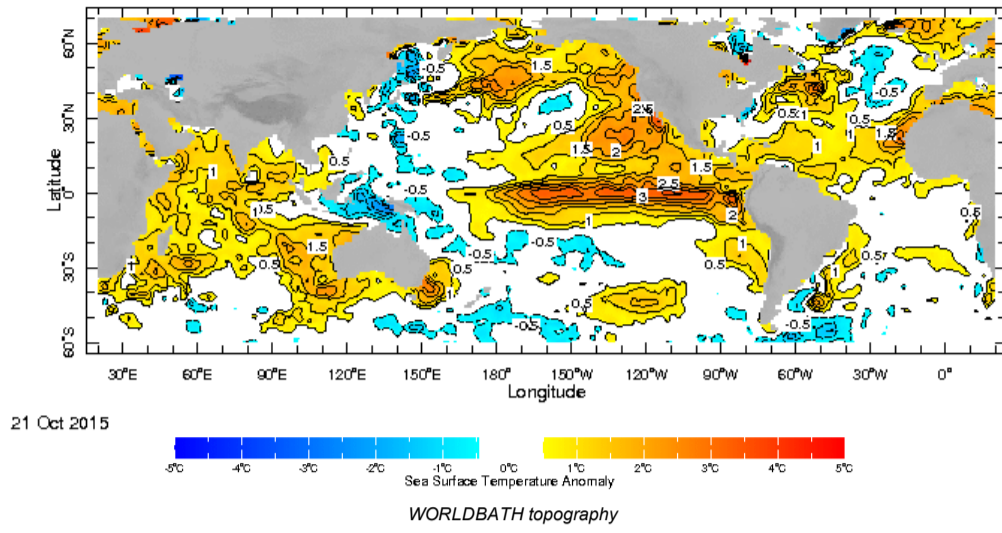


Monthly Anomaly

### Dekadal (10 Day) Satellite Derived Rainfall Estimates

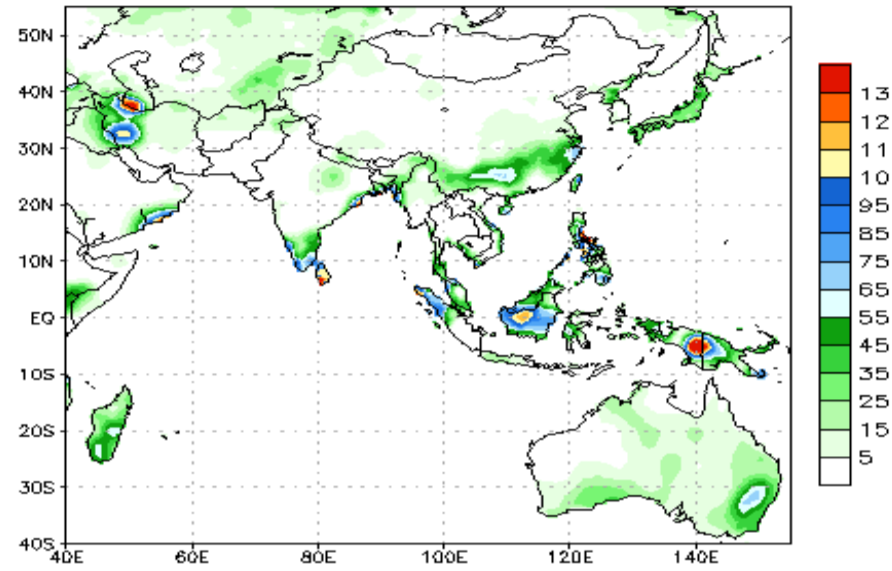


**Weekly Average SST Anomalies**



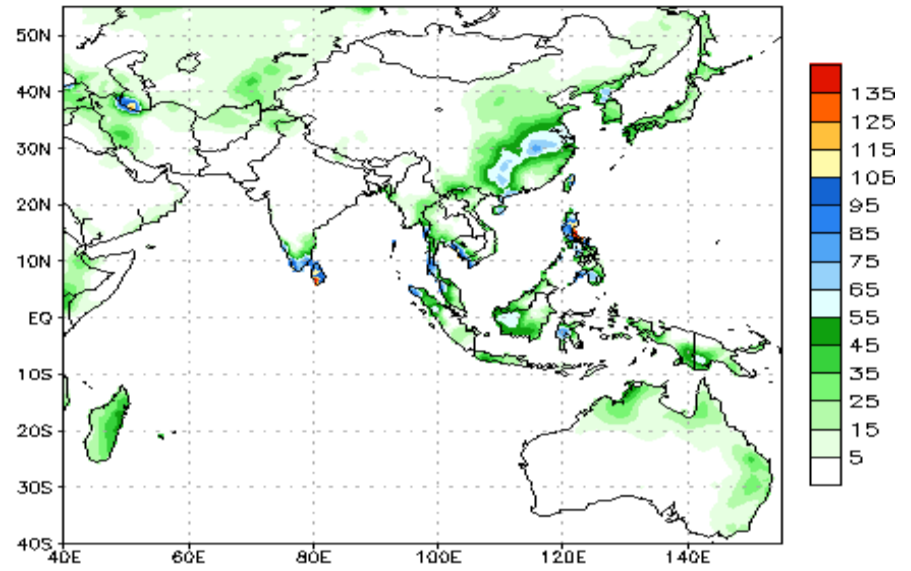
**NCEP GFS 1- 14 Day prediction**

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)  
from: 28Oct2015  
28Oct2015–03Nov2015 Accumulation



Bias correction based on last 30-day forecast error

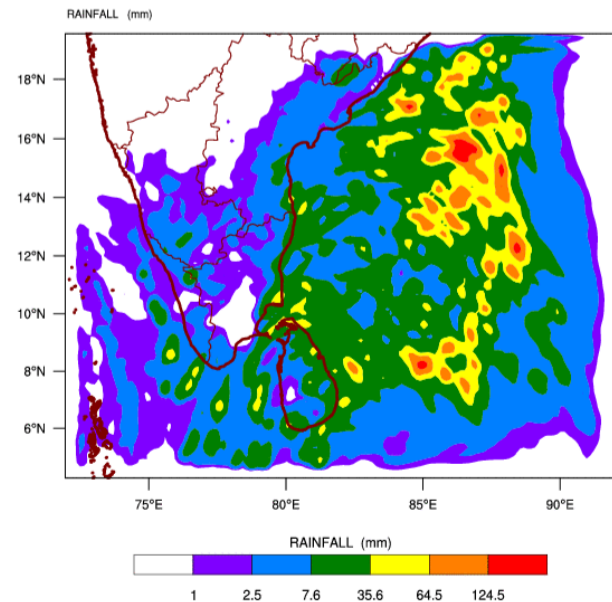
NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)  
from: 28Oct2015  
04Nov2015–10Nov2015 Accumulation



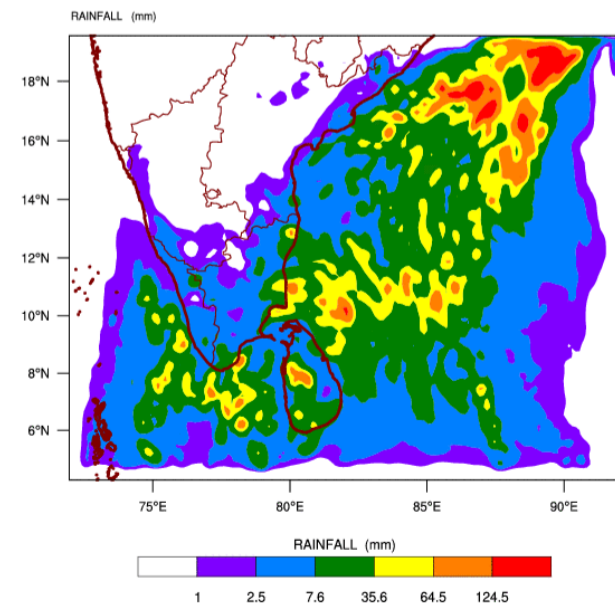
Bias correction based on last 30-day forecast error

**WRF Model Forecast (from IMD Chennai)**

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 28-10-2015 valid for 03 UTC of 30-10-2015



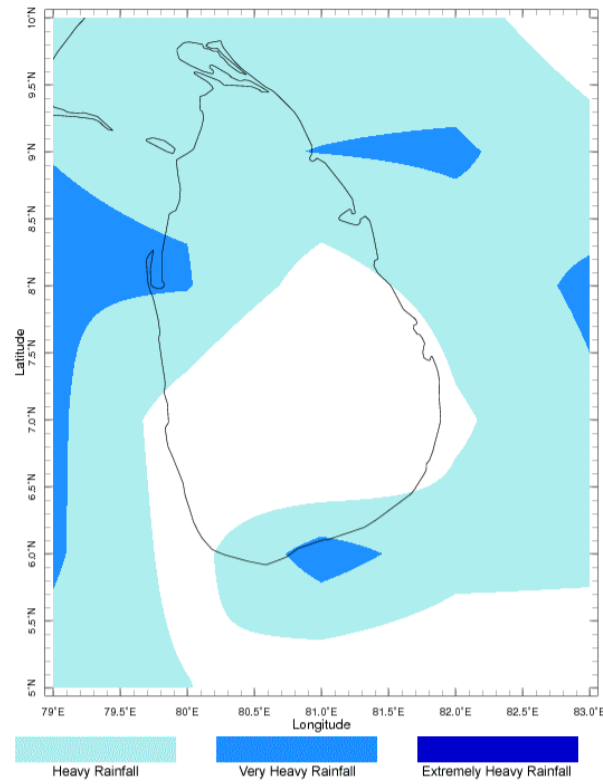
WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 28-10-2015 valid for 03 UTC of 31-10-2015



## Weekly Rainfall Forecast

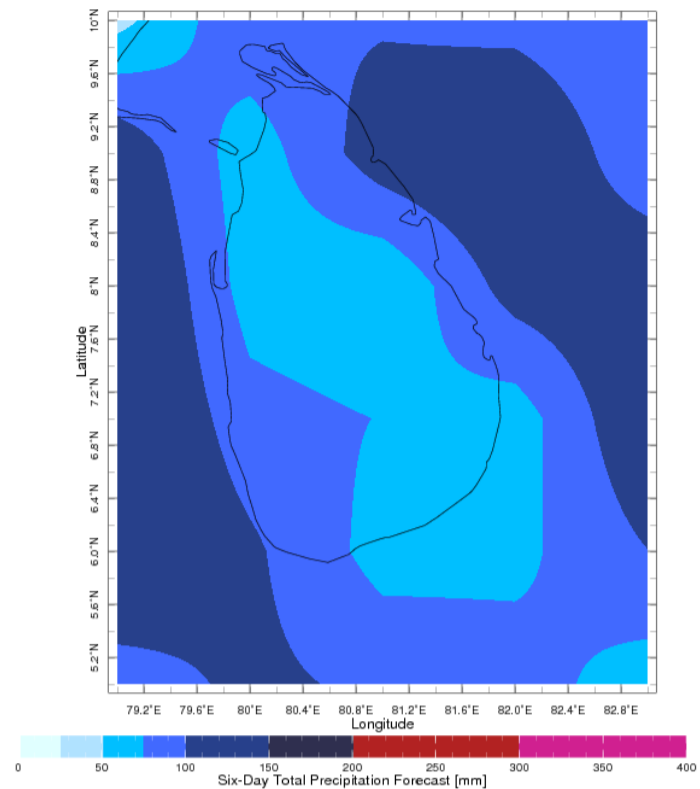
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 28 Oct 2015 - 2 Nov 2015 Issued 0000 28 Oct 2015



Extreme Rainfall Forecast

Forecast for 28 Oct 2015 - 2 Nov 2015 Issued 0000 28 Oct 2015

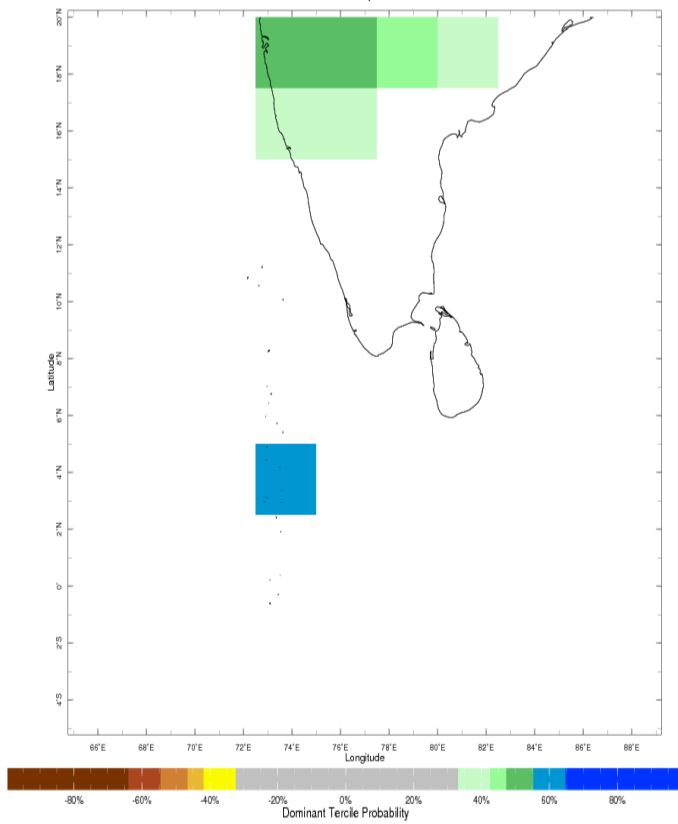


Total Six Day Precipitation Forecast

## Seasonal Rainfall and Temperature Forecast

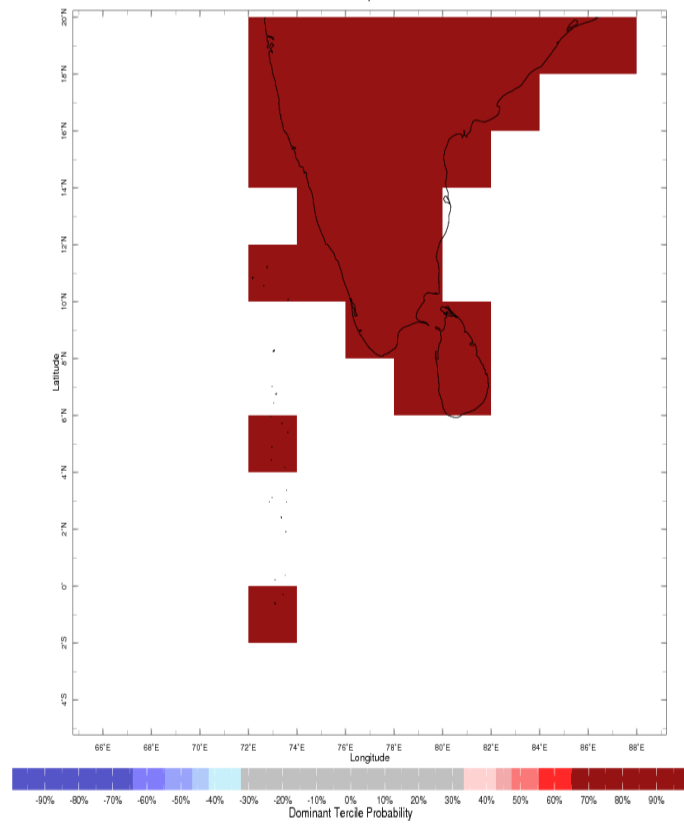
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile – that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile probability levels. The upper side of the color bar shows the colors used for increasingly strong probabilities when the dominant tercile is the above-normal tercile, while the lower side shows likewise for the below-normal tercile. The gray color indicates an enhanced probability for the near-normal tercile (nearly always limited to 40%).

Nov 2015 - Jan 2016 IRI Seasonal Precipitation Forecast issued Oct 2015



Precipitation Forecast

Nov 2015 - Jan 2016 IRI Seasonal Temperature Forecast issued Oct 2015



Temperature Forecast

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